SHELEKHOV, V. V.

AID P - 1150

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 3/31

Author : Shelekhov, V. V., Eng.

Title : Rejection of rotted wood in the Mosenergo networks

Periodical : Energetik, 11, 7-11, N 1954

Abstract : The author is of the opinion that because of wrong methods of testing wood, much is rejected and replaced permaturely. He suggests an improved method, which should effect a considerable economy. He describes a device of his own construction for testing the degree of rotting. Five photographs, drawings and diagrams.

Institution : None

Submitted : No date

SHELEKHOVA, N.A., meditsinskaya sestra(Baku).

Care of patients with complicated pulmonary tuberculosis. Med.sestra no. 6:19-20 Je '53. (MLRA 6:6)

(Tuberculosis) (Nurses and nursing)

IVANOV, S.S., kand. tekhn. nauk, SHELEKHOVA, O.S., starshiy nauchnyy sotrudnik

Leading in technical progress. Tekst. prom. 19 no.11:4-7 N '59.
(MIRA 13:2)
(Textile research)

S/076/60/034/007/030/042/XX
B004/B241

26.1610

AUTHORS: Skarre, O. K., Tereshkevich, M. O., and Shelekhova, T. S.

TITLE: Study of the Influence of the Nature of the Cation on the Mobility of Oxygen Atoms in the Anion in Aqueous Solutions. I

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 7, pp. 1599 - 1601

TEXT: The authors proceed from the statement that the influence of the cation on the properties of the anion in concentrated solutions has not yet been thoroughly investigated. The aim of this paper was therefore to study the oxygen exchange between water and the nitrates of Li, Na, K, Rb, Cs, and Ag. The weighed sample consisting of nitrate and water was put into an ampoule and placed into the thermostat. The water-salt ratio was 3:1 related to one gram-atom of oxygen. After a certain time, the ampoules were opened, the water driven off, and the intensity of the exchange reaction calculated from the decrease of the O^{18} content in the water. Analysis was performed by means of flotation. Since no oxygen

Card 1/2

87766

Study of the Influence of the Nature of the Cation on the Mobility of Oxygen Atoms in the Anion in Aqueous Solutions. I

S/076/60/034/007/030/042/XX
B004/B068

exchange took place at 140° and 150°C, small quantities of HNO_3 were added as catalyst. The exchange reaction rate decreased in the following order: $HNO_3 > LiNO_3 > NaNO_3 > KNO_3 > CsNO_3$. $AgNO_3$ showed the same activity as $LiNO_3$. It is supposed that the exchange takes place through complexes forming from solvent, cation, and anion, with the proton of the acid acting as catalyst. The complexes must be rather stable, since no exchange takes place with $CsNO_3$. G. P. Miklukhin and A. I. Brodskiy are mentioned. There are 1 table and 7 references: 5 Soviet, 1 US, and 1 British.

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University)

SUBMITTED: October 22, 1958

Card 2/2

SHELEKHOVA, Z.P.

Foreign bodies in the bronchi. Probl. tub. 42 no.1:86-88 '64.
(MIRA 17:8)

1. Vinnitskiy protivotuberkuleznyy dispanser (glavnyy vrach O.Z. Goretskaya).

SHELELYAKOVSKIY, K.Z.

ASSONOV, A.D., laureat Stalinskoy premii, kandidat tekhnicheskikh nauk; SHELELYAKOVSKIY, K.Z., kandidat tekhnicheskikh nauk; LANKIN, P.A., kandidat tekhnicheskikh nauk.

Rapid cementation in heating with high frequency current. Vest. mash. 34 no.6:56-60 Je '54. (MLRA 7:7)
(Cementation(Metallurgy)) (Induction heating)

SHELELYAYEV, A.I., inzh.-ekonomist.

Lowering the costs of local building materials. Trudy MTEI no.6: 224-239 '57. (MIRA 11:5)
(Building materials industry--Accounting)
(Railroads--Freight)

TARTAKOVSKIY, R.N., kand.tekhn.nauk (g.Gomel'); SHELELYAYEV, A.I., inzh. (g.Gomel')

Effectiveness of creating track skeleton assembly units in the plants manufacturing reinforced concrete ties. Zhel.-dor.transp. 43 no.9:36-37 S '61. (MIRA 14:8)
(Railroads--Ties, Concrete)

ANOKHIN, S.I.; ANTSUK, D.N.; GUTSEV, Ye.G.; GOLOVANCHIKOV, I.Ya.; NIKITENKO, V.G.; SHELELYAYEV, A.I.; MARTINKEVICH, F.S., red.; PASHKEVICH, O.N., red.; VASIL'YEVSKIY, I., red. izd-va; VOLOKHONOVICH, I., tekhn. red.

[Improving the efficiency of large-csale transports in the White Russian S.S.R.]Ratsionalizatsiia perevozok massovykh gruzov v Belorusskoi SSR. Minsk, 1963. 241 p. (MIRA 16:7)

1. Akademiya navuk BSSR. Minsk, Instytut ekonomiki.
(White Russia--Freight and freightage)

SAPUNOV, Petr Yegorovich, zven'yevoy, Geroy Sotsialisticheskogo Truda. Prinimali uchastiye: FEDIN, M.A.; SALOMAKHIN, I.I.; SAFRONOV, V.V.; SHELEMENTSEV, I.T. CHELYSHKIN, Yu.G., red.; SERGEYEV, V.I., red.; SOKOLOVA, N.N., tekhn.red.

[Sixty-two centners of corn per hectare] 62 tsentnera zerna kukuruzy s gektara. Moskva, Izd-vo sel'khoz.lit-ry, zhurnalov i plakatov, 1962. 77 p. (MIRA 15:4)

1. Kolkhoz "Krasnoye znamya" Dmitrovskogo rayona Orlovskoy oblasti (for Sapunov).
(Dmitrov District—Corn (Maize))

SHELEMENT'YEVA, A.N.; VALUYEV, A.I., dots., otv. red.

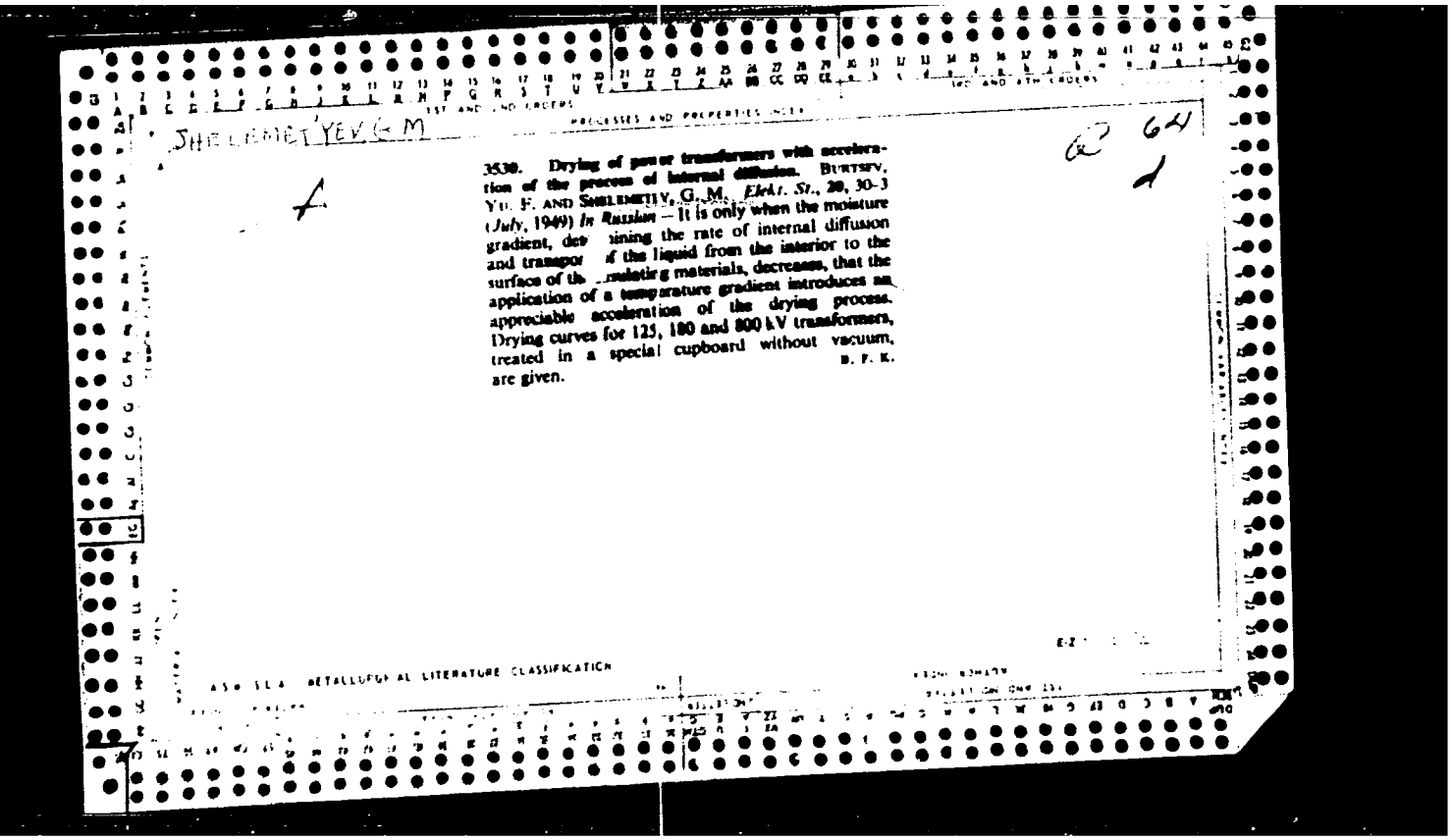
[Local budgets and their role in economic and cultural development] Mestnye biudzhety i ikh rol' v khoziaistvennom i kul'turnom stroitel'stve. Sverdlovsk, Ural'skii gos. univ., 1963. 43 p. (MIRA 17:9)

SHELEMET'YEV, A.

Cork oak. IUn.nat. no.3:24-25 Mr '60. (MIRA 13:5)
(Cork tree)

[illegible], [illegible]

"Drying Power Transformers with an Acceleration of the Process of Internal Diffusion," Elek. Stan., No. 7, 1[illegible]. Engr.



3530. Drying of power transformers with acceleration of the process of internal diffusion. BURTSEV, YU. F. AND SHELEMETYEV, G. M. *Elektr. St.*, 20, 30–3 (*July*, 1949) *In Russian* — It is only when the moisture gradient, determining the rate of internal diffusion and transport of the liquid from the interior to the surface of the insulating materials, decreases, that the application of a temperature gradient introduces an appreciable acceleration of the drying process. Drying curves for 125, 180 and 800 kV transformers, treated in a special cupboard without vacuum, are given. B. F. K.

ACC NR: AP7001992 SOURCE CODE: UR/0040/66/030/006/0993/0999

AUTHOR: Shelement'yev, G. S. (Sverdlovsk)

ORG: none

TITLE: On the stability of a nonholonomic system

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 6, 1966, 993-999

TOPIC TAGS: motion stability, control system stability

ABSTRACT: The problem of the stabilization of nonholonomic systems in the neighborhood of unstable equilibrium positions is considered and a stabilizing control law is constructed analytically in terms of the coordinates and velocities. The position of the controlled mechanical system is determined by generalized coordinates $q_i(t)$ ($i = 1,\ldots,n + l$) which are restricted by l nonholonomic constraints. It is assumed that the constraints are linear and stationary and hence are represented in the form of a system of l differential equations which cannot be integrated. It is further assumed that the forces acting on the system have a mass-flow function which makes it possible to describe this system by means of Lagrange's equations. The mathematical analysis which is presented concerns the construction of a control law $u = u(q,\dot{q})$ which immediately brings a set of equilibrium positions $q_1^0(q)$ rather than indivi-

ACC NR: AP7001992

dual points $q = q^*$, $q_i = q_i^0(q^*)$ to a state of asymptotic stability. The author thanks N. N. Krasovskiy for posing the problem and for his comments. Orig. art. has: 32 formulas.

SUB CODE: 13,12/ SUBM DATE: 15Jun66/ ORIG REF: 011

Card 2/2

L 57504-65 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) Pf-4 LJP(c)
ACCESSION NR: AP5014931 UR/0040/65/029/003/0401/0407

AUTHORS: Krasovskiy, N. N. (Sverdlovsk); Shelement'yev, G. S. (Sverdlovsk)

TITLE: On correcting the motion of a system with two degrees of freedom at one cyclic coordinate

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 3, 1965, 401-407

TOPIC TAGS: Lagrange equation, control theory, control research, control system

ABSTRACT: The problem of constructing a control force u(t) guiding a system with two degrees of freedom is analyzed. The control system is described by the Lagrange equations

$$f(q_1'', q_1', q_1, p_2) = b_1(q_1, q_1', p_2)\,u, \quad dp_2/dt = b_2(q_1, q_1', p_2)\,u,$$

where q_1 are generalized coordinates, T (q,q') is kinetic energy, $\Pi(q)$ - potential energy, b_i (q,q') are functions defining the direction of the external control force, and u (t) is the value of the control force. The problem consists of selecting u (t) which leads the system

$$\frac{d}{dt}\left(\frac{\partial T}{\partial q_i'}\right) - \frac{\partial T}{\partial q_i} = -\frac{\partial \Pi}{\partial q_i} + b_i u, \quad (i = 1, 2)$$

Card 1/3

L 5?5?4-65
ACCESSION NR: AP5014931

toward the given motion $q_1 = q_1^\circ = \text{const}, \quad \dot{q}_1' = 0, \quad p_s = p_s^\circ = \text{const}$.

The first approach discussed involves a linear approximation. The given equation set is converted to a first order approximation form. Necessary and sufficient conditions for controlling the system are stated. The method of solution of the problem follows the procedures outlined by N. N. Krasovskiy (Ob odnoy zadache optimal'nogo regulirovaniya. PMM 1957, t. 21, vyp. 5). The solution leads to the derivation of a general form of the control force which is a function of parameters found in the manner described by the author. Further consideration is given to the nonlinear system case. An iterative process is described for constructing the control function which solves the nonlinear problem. A concrete example of the solution method is given for the case of a mathematical pendulum constrained as indicated in Fig. 1 on the Enclosure. Orig. art. has: 4 figures and 37 equations.

ASSOCIATION: none

SUBMITTED: 03Feb65 ENCL: 01 SUB CODE: ME, HA

NO REF SOV: 004 OTHER: 001

Card 2/3

L 27473-66 EWT(m)/EWP(t) IJP(c) JD/HW/WB

ACC NR: AP6015286 (N) SOURCE CODE: UR/0365/66/002/003/0312/0317

AUTHOR: Kravchenko, T. G.; Shelement'yeva, Ye. A.; Zhuk, N. P.; Karpman, G. M.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Oxidation resistance of dispersion-strengthened nickel

SOURCE: Zashchita metallov, v. 2, no. 3, 1966, 312-317

TOPIC TAGS: nickel, nickel alloy, dispersion strengthened alloy, alloy oxidation, aluminum oxide containing alloy, chromium oxide containing alloy, titanium oxide containing alloy, zirconium oxide containing alloy

ABSTRACT: The oxidation behavior of dispersion-strengthened sintered nickel alloys containing up to 7% Al_2O_3, Cr_2O_3, TiO_2, or 5% ZrO_2 oxides has been investigated at 800—1200C in air with a test duration of 2 hr. It was found that oxidation of all the alloys tested follows a parabolic rate with the formation of NiO scale consisting of a porous inner layer and a dense outer layer of almost the same thickness. Both layers have a cubic lattice. The outer layer has equiaxial crystals and the inner has acicular crystals. The outer scale layer on alloys with Al_2O_3 and Cr_2O_3 peels off during cooling from 1000—1200C. The scale on alloys with ZrO_2 and TiO_2 is less susceptible to cracking. All the oxides tested increase the oxidation rate at all tested temperatures. However, TiO_2 and ZrO_2 accelerate the oxidation much less than do Al_2O_3 and Cr_2O_3. Orig. art. has: 4 figures and 4 tables. [ND]

SUB CODE: 11/ SUBM DATE: 27Sep65/ ORIG REF: 008/ OTH REF: 007/ ATD PRESS: 4/260

Card 1/1 BLG UDC: 620.193.5

BALASHOV, A.A.; LOSSIYEVSKIY, V.L.; CHERNYSHEV, V.N.; SHVAB, A.F.; SHELEMIN, B.V.; ANDREYENKO, Z.D., red.; POPOVA, S.M., tekhn. red.

[Flow sheets and means of automation of radiochemical industries; automation of radiochemical extraction processes] Skhemy i sredstva avtomatizatsii radiokhimicheskikh proizvodstv; k voprosu ob avtomatizatsii radiokhimicheskikh ekstraktsionnykh protsessov. Moskva, Gosatomizdat, 1963. 186 p. (MIRA 17:2)

L 1909-66 EPA(s)-2/EWT(m)/EPF(n)-2/EWP(t)/EWP(b)
AM5026187 BOOK EXPLOITATION UR/

39
38
B41

Shelemin, Boris Vladimirovich

Automatic analyzers for the determination of the composition of radiochemical media (Avtomaticheskiye analizatory sostava radiokhimicheskikh sred) Moscow, Atomizdat, 65. 0293 p. illus., biblio., fold. chart. Errata slip inserted. 1,650 copies printed.

TOPIC TAGS: analytic chemistry, physical chemistry instrument, radiation chemistry, nuclear fuel, spectrophotometer, spectrometer, photometer, electrochemistry, automation equipment

PURPOSE AND COVERAGE: This book present automatic analyzers for the determination of the composition of radiochemical media, the work of these analyzers being based on modern physical and physico-chemical methods of analysis. Technical demands which are made for automatic analyzers are stated. The principle of the process, constructions and technical aspects based on published data are described. Technological possibilities of analyzers and the fields of their application are also discussed. General data on radiochemical extraction processes of treating irradiated fuel and automation schemes for better understanding of the demands for automatic analyzers are covered. The book is recommended for technical engineers specializing in automation of processes of

Card 1/3 UDC: 681.20:543.53

L 1909-66
AM5026187

radiochemistry and for radiochemistry technicians as well as for university students of corresponding specialties.

TABLE OF CONTENTS (abridged):

Card 2/3

L 1909-66
AM5026187

SUB CODE: GC, NP SUBMITTED: 07May65

NO REF SOV: 137 OTHER: 212

Card 3/3

[illegible], [illegible]; [illegible], V. K.; [illegible]

Synthesis of [illegible] alkoxy-Δ^3-dihydropyrans (cyclic acetals of glutaraldehyde). Zhur. ob. khim. 34 no.6:1909-1915 Je '64. (MIRA [illegible])

1. [illegible]vskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.

(cont.)

SOV/51-6-6-22/34

AUTHORS: Podmoshenskiy, I.V. and Shelamina, V.M.

TITLE: Determination of Absorption of Analytic Spectral Lines in an Arc and a Spark (Opredeleniye pogloshcheniya analiticheskikh spektral'nykh liniy dugi i iskry)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 6, Nr 6, pp 813-815 (USSR)

ABSTRACT: The authors describe a method of measuring absorption using two identical sources. One source is an arc or a spark (5 in Fig 1) in which the substance studied is placed and the other is a virtual source formed by focusing the light from the arc or the spark onto a concave mirror 7 by means of a lens 6 (Fig 1). Some of the light from 7 is absorbed at 5 and some of it passes on to a spectrometer slit 1 (via lens 2 and a diaphragm 3). This method ensures that these two sources are exactly identical. To allow for the lenses at the mirror 7 and the objective 6 and for the diaphragm action of the arc electrodes 4, the following procedure is used. A wire is placed across a light beam at the objective 6. Then a stigmatic spectrograph will record two spectra: (1) the emission spectrum of the arc 5 at the points shielded by the wire and (2) the emission spectrum of 5 with the addition of light from 7 transmitted by 5. The method was applied to lines of Ni, Cr, Si and Mn

Card 1/2

Determination of Absorption of Analytic Spectral Lines in an Arc and a Spark

excited in an alternating-current arc. At low concentrations of these metals in the arc their self-absorption is small, but it rises with concentration. Self-absorption was also noticed in lines of Ni and Cr excited in a high-voltage spark. There are 2 figures and 2 Soviet references.

Card 2/2

ACCESSION NR: AP4039702 S/0051/64/016/006/0949/0957

AUTHOR: Ogurtsova, N.N.; Podmoshenskiy, I.V.; Shelemina, V.M.

TITLE: Coefficient of continuous absorption of hydrogen-carbon plasma at 40,000K and pressures of hundreds of atmospheres

SOURCE: Optika i spektroskopiya, v.16, no.6, 1964, 949-957

TOPIC TAGS: plasma, plasma temperature, high temperature plasma, light source, absorption coefficient, gas discharge, multicomponent plasma, plasma absorption, ruby laser

ABSTRACT: The present determination of the coefficient of continuous absorption of plasma at high temperature was undertaken for the purpose of finding the degree of deviation of the radiation from an EV-39 capillary discharge source (N.N.Ogurtsova, I.V.Podmoshenskiy, and M.I.Demidov, Opt.mekh.prom.No.1,1,1960) from the emission of an absolutely black body. In view of the fact that the temperature, pressure, and chemical composition of the plasma in a high-power pulse discharge in the EV-39 had been measured with good accuracy, it was feasible to calculate the continuous absorption associated with free-free and free-bound electron transitions for purposes of comparison with experimental data. In the present work, 10,000-ampere discharges

Card 1/3

ACCESSION NR: AP4039702

were studied in textolite capillary tubes 10 mm long and 2 and 3 mm in diameter, i.e., conditions approximating the operating conditions of the EV-39 source. It was established experimentally that the atomic composition of the plasma was 47% H, 37% C, 16% O, and under 1% inorganic contaminants, and that the plasma was in thermodynamic equilibrium at 39,000K and pressures in the range from 120 to 500 atm. The values of the coefficient of continuous absorption were measured by two independent procedures: transillumination of the plasma by the radiation from a more intense source, and measurement of the absolute intensity of emission of a plasma layer of known thickness. An oscillographic recording technique was employed. The long-wave source for transillumination was a ruby laser; in the short-wavelength region, the source was a flash tube similar to the EV-39. The results for 500 atm (coefficient versus wavelength) are given in a figure. The coefficient at 39,000K and at 120 atm equals 1.2 cm^{-1} for λ = 2600 Å and about 0.0 at 500 atm; for λ = 6942 Å the values are about 10 and >11 cm^{-1}. Comparison with theory shows that at 120 atm, the experimental coefficient is 2 to 3 times higher than predicted by theory; at 500 atm the agreement is closer. The reasons for the discrepancy are discussed, and means for reducing it are indicated. Orig.art.has: 1 formula, 4 figures, and 1 table.

Card 2/3

ACCESSION NR: AP4039702

ASSOCIATION: none

SUBMITTED: 26Jul63 ATD PRESS: 3084 ENCL: 00

SUB CODE: ME, OP NR REF SOV: 008 OTHER: 007

3/3
Card

ACCESSION NR: AP4009456 S/0051/63/015/006/0743/0746

AUTHOR: Ogurtsova, N.N.; Podmoshenskiy, I.V.; Shelemina, V.M.

TITLE: Characteristics of plasma jets from a high-power capillary discharge

SOURCE: Optika i spektroskopiya, v.15, no.6, 1963, 743-746

TOPIC TAGS: capillary discharge, plasma, plasma jet, EV 39 source, plasma jet structure

ABSTRACT: The paper describes and discusses the results of spectroscopic investigation of the plasma jets escaping from the open ends of a pulse textolite (laminated resin) capillary EV-39 light source. The current density in the capillary was about 3 x 10^7 A/cm^2, the thermal dissipation to the walls about 10^7 watts/cm^2, and wall erosion rate about 30 cm/sec. The temperature was about 40 000°K; the channel presaure 400 to 500 atm. Under these conditions the chemical composition of the plasma channel and jet was largely determined by the composition of the capillary walls (the atomic composition of textolite is 46.4% H, 37.1% C and 15.5% O and ash content is about 1% by weight). The purposes of the study were to clarify the possible influence of the quasistationary plasma discharge on the radiation of the

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ACC. NR: AP4009456

capillary source and to determine the approximate structure and characteristics of the jets. Time-resolved studies showed that despite the brevity of the period (100 to 400 microsec) during which the temperature and pressure in the EV-39 tube remain constant, stationary or quasistationary gas outflow conditions have enough time in which to be established. Shock waves are evident in the time-resolution spectrograms; the wave propagation velocity is about 1 km/sec. A method proposed for measuring the gas velocity in the jet was used to evaluate the velocity at the jet axis as about 13 km/sec behind the shock front. Temperature evaluations with reference to selected C II and C III lines indicate that the rate of cooling in the heart of the jet is relatively slow ($T = 30\ 000^{\circ}K \pm 20\%$, that is, not much lower than in the channel). Thus, the heavy-current capillary discharge tube EV-39 (modified EV-45) can be regarded as a pulse plasmotron, capable of providing a high-velocity, high-temperature plasma jet. Unlike conventional gas-blast plasmotrons, with the present tube one can vary the composition of the plasma jet at will by appropriate choice of the material lining the inner wall of the capillary, which makes it feasible to investigate plasmas of different composition. "The authors are grateful to V. I. Bayunov and M. I. Demidov for assistance in photographing the jets." Orig.art.has: 4 figures.

Card 2/3

PODMOSHENSKIY, I.V.; SHELEMINA, V.M.

Effect of the coating of samples with a thin layer of water on the analytical properties of high voltage spark. Zav.lab. 29 no.5:562-563 '63. (MIRA 16:5)
(Spectrum analysis) (Electric spark) (Sampling)

SHEKHURIN, Diodor Yefremovich; SHELEMOV, P., red.

[Ways of increasing the efficiency of the work of the information section of research institutes] Puti povysheniia effektivnosti raboty otdela informatsii NII. Leningrad, 1965. 23 p. (MIRA 18:10)

ARANDARENKO, V.; SHELENGOVSKIY, A.

Universal machinery attachments. Tekh.mol. 23 no.2:35 F '55.
(Machine tools--Accessories and attachments) (MLRA 8:4)

SHELENGOVSKIY, A.I.

USSR/ Engineering - Assembly jigs

Card 1/1 Pub. 103 - 10/25

Authors : Shelengovskiy, A. I.

Title : An experiment on using universal-assembly jigs

Periodical : Stan. i instr. 1, 25-27, Jan 1955

Abstract : A description is presented of several types of universal-assembly jigs used in a machine shop for accurately guiding and locating tools during the operation involving the production of interchangeable components. Tables, illustrations.

Institution : .....

Submitted : .....

SHELENGOVSKIY, A.I., inzh.

Saving four and a half million rubles during four years (using universal assembly equipment). Mashinostroitel' no.1:15-17 N '56. (MIRA 12:1)
(Efficiency, Industrial) (Assembly-line methods)

28-58-2-5/41

AUTHOR: Shelengovskiy, A.I., Engineer

TITLE: "USP"-System (Sistema USP)

PERIODICAL: Standartizatsiya, 1958, Nr 2, pp 17-18 (USSR)

ABSTRACT: The principle of the "USP" ("Universal'no-Sbornyye Prisposobleniya") system consists in assembling standardized interchangeable parts of work-holding devices into various combinations for machine tool, welding, assembling, checking and other operations. The "USP"-system devices are particularly suitable and advantageous in experimental, single-piece and small-lot production. A jig for drilling 3 holes in a complex-shaped part is shown (photograph, p 18). The basic members of the jig are provided with a system of grooves in which the exchangeable members can be attached by exchangeable keys, bolts and studs in any wanted position. Holding devices are nearly exclusively assembled standard members, and special members must only be made. A total of 30,000 universal holding devices were assembled at a machinebuilding plant (not identified) over the past 5 years. These devices are applicable for 50-55% of the work needing holding devices at that plant. The cost of 25,000 "USP" parts amounted to 1 million rubles; the

Card 1/2

period of depreciation was 1.2 - 2 years. It is pointed out that centralized production of "USP" parts should be organized. There is 1 photograph.

AVAILABLE: Library of Congress

Card 2/2 1. Industrial standards 2. Standardization-USSR

SOV/117-58-12-32/36

AUTHORS: Shelengovskiy, A.I. and Rodionov, N.M., Engineers

TITLE: Vibration Shears (Vibratsionnyye nozhnitsy)

PERIODICAL: Mashinostroitel', 1958, Nr 12, p 41 (USSR)

ABSTRACT: Vibration shears for cutting 3 mm thick stainless steel and 4 mm thick "20" grade steel sheets are here described. The cutting can be done in straight or curved lines. The shears can be fitted on a special support or on a bench. There is 1 diagram.

Card 1/1

SHELENGOVSKIY, A.I.

Press for marking parts. Stan. i instr. 34 no.12:29 D '63.
(MIRA 17:11)

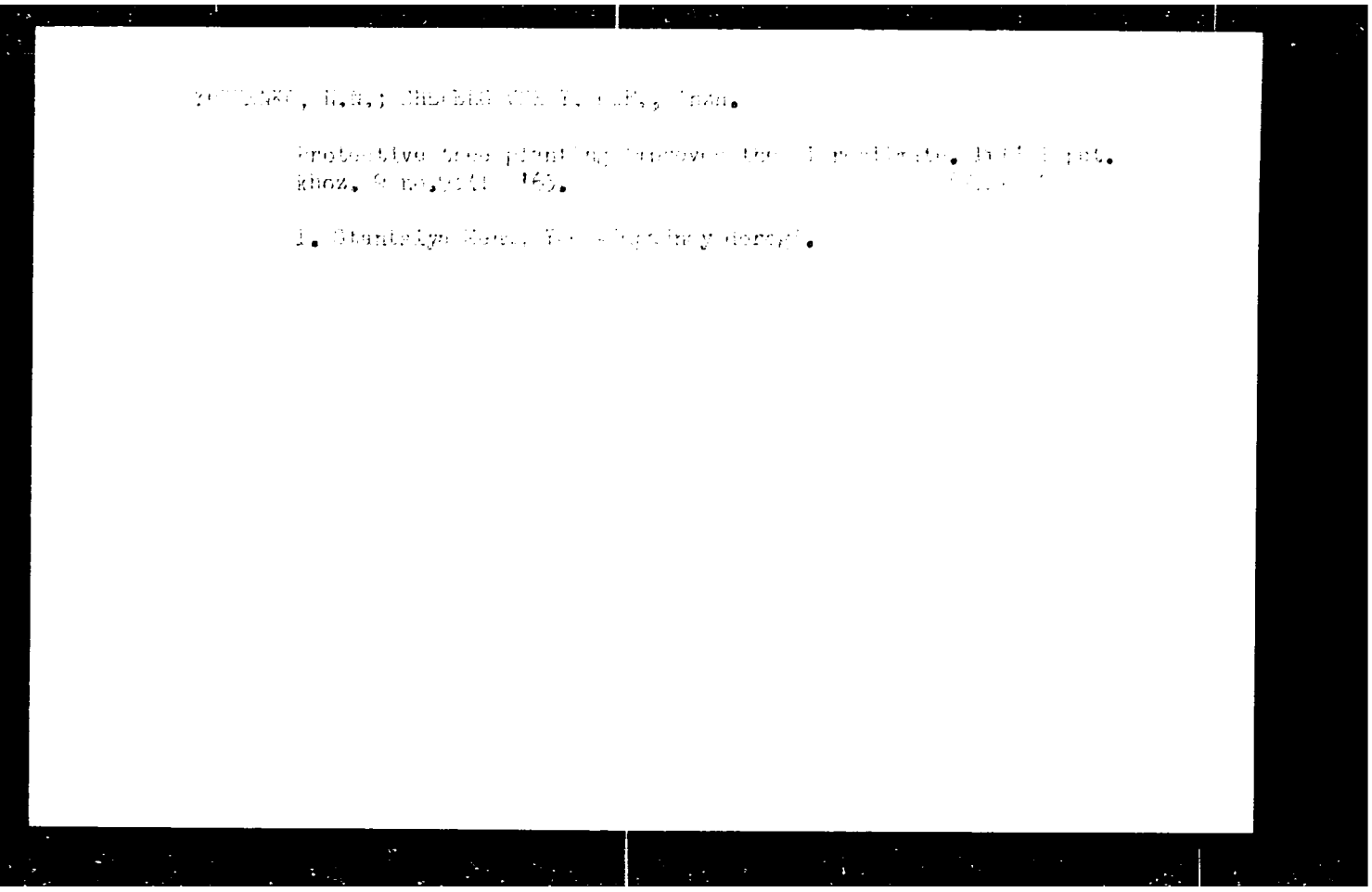
SHILENKOVSKIY, A.I.; ADAMCHENKO, V.V.; DOROGAYTSEV, A.I.

System of multipurpose organizational and technical equipment with interchangeable parts. Stan. i instr. 35 no. 4:33-34 Ap '64. (MIRA 17:5)

SHELENGOVSKIY, D.

Our forestry should have model standard production norms. Sots. trud. no.9:123-124 '58. (MIRA 11:10)

1.Starshiy inzhener otdela zashchitnykh lesonasazhdeniy sluzhby puti Yugo-Zapadnoy zheleznoy dorogi.
(Forest--Production standards)



SHELEHGOVSKIY, D.F.

Protective plantings of the trellis type. Put' i put.khoz. 4 no.1:40 Ja '60. (MIRA 13:5)

1. Starshiy inzhener otdela zashchitnykh lesonasazhdeniy, Kiyev.
(Hedges) (Railroads--Maintenance and repair)

SHELENGOVSKIY, D.F.; SAVCHENKO, P.P.

Improving the quality of seedling materials. Put' i put. khoz. 5 no.2:39 F '61. (MIRA 14:3)

1. Starshiy inzhener otdela zashchitnykh lesonasazhdeniy, Kiyev (for Shelengovskiy). 2. Nachal'nik Nezhinskogo pitomnika Kiyevskoy distantsii zashchitnykh lesonasazhdeniy (for Savchenko).

(Seedlings)

SHELENGOVSKIY, D.F., starshiy inzh.

How to preserve oak plantations. Put' i put.khoz. 6 no.2:41 '62. (MIRA 15:2)

1. Otdel zashchitnykh lesonasazhdeniy Yugo-Zapadnoy dorogi, g. Kiyev.

(Windbreaks, shelterbelts, etc.)

SHELENGOVSKIY, D. F., inzh. (Kiyev)

Reclamation of swampy sections. Put' i put. khoz. 6 no.8:40 '62. (MIRA 15:10)

(Railroads—Maintenance and repair)
(Reclamation of land)

SHELENIN, Ye. I., Docent.

Springs (Mechanism)

Effect of internal friction on the deformation of springs during a stroke. Nauk. zap LPI no 1, 1947.

Monthly List of Russian Accessions, Library of Congress, December 1952. UNCLASSIFIED.

SHELENKOV, Aleksandr, kinooperator, zasluzhennyy deyatel' iskusstv RSFSR i Latviyskoy SSR

Angle of view and foreshortening in photography (to be continued). Sov.foto 21 no.3:17-18 Mr '61. (MIRA 14:4)
(Photography, Artistic) (Composition (Photography))

SHELENKOV, Aleksandr, zasluzhenny deyatel' iskusstv RSFSR i Latviyskoy SSR

Angle and foreshortening in photography. Sov.foto 21 no.4:14-15 Ap '61. (MIRA 14:3)

(Photography)

L 61820-65 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c)
MJW/JD/JG/WB

ACCESSION NR: AP5018284 UR/0314/65/000/007/0035/0038 22
621.791.856:669.295.001.51 21
B

AUTHOR: Besednyy, V. A. (Engineer); Shelenkov, G. M. (Engineer)

TITLE: Experimental construction of welded titanium chemical equipment

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 7, 1965, 35-38

TOPIC TAGS: chemical apparatus, titanium welding, weld corrosion, weld mechanical property

ABSTRACT: Chemical devices made of titanium have been produced during the past five years by the factory im. Frunze. After a brief description of the drier (e.g., for tungstic acid), four-way heat exchanger, evaporators and column-type mixers, the authors discuss the titanium welding technique in detail. Welding was carried out by manual argon-arc equipment using 1-20 mm sheets of VT1-1 titanium. The nonmelting electrode was made of lanthanum alloyed tungsten. Welding procedures for various types of welds are given together with the pertinent welding parameters and estimates of weld quality and weld corrosion stability (tests with H_2SO_4, HNO_3, HCl, and $H_2C_2O_4$). Orig. art. has: 6 figures and 2 tables.

Card 1/2

L 61820-65

ACCESSION NR: AP5018284

ASSOCIATION: Zavod im. Frunze (Factory im. Frunze)

SUBMITTED: 00 ENCL: 00 SUB CODE: GC, D

NO REF SOV: 000 OTHER: 00

Card 2/2

SHELENKOV, V. M., jt. au.

Fedorenko, I. D.

Irrigation of agricultural crops in the central chernozem belt Moskva, Gos. izd-vo sel'khoz. lit-ry, 1954. 308 p.maps (55-35643)

1. Irrigation - Russia. I. Shelenkov, V.M. jt. au.

FEDORENKO, I.D.; SHELENKOV, V.M

[Irrigation of agricultural crops in the central Chernozem region] Oroshenie sel'skokhoziaistvennykh kul'tur v tsentral'no-chernozemnoi polose. 2. izd. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1957. 202 p. (Irrigation farming) (MLRA 10:9)

S/170/62/005/009/008/010
B104/B102

AUTHORS: Kolosov, S. P., Ostryakov, I.A., Smirnov, V. A., Shelenkov, V. M.

TITLE: Current-conducting polymers as thermistors

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 9, 1962, 85 - 89

TEXT: Thermoelectric characteristics of 16 different current conducting polymers as determined experimentally are given. The characteristics of other polymers are similar to these. Two groups of specimens were studied: (1) based on mixtures containing a constant weight of filler with varying weights of polyisobutylene and/or polyethylene; (2) based on mixtures containing constant weights of polyisobutylene and/or polyethylene with varying weights of fillers. The specimens in the first group were of the type П-85Х (P-85Kh), П-118Х (P-118Kh) etc., those in the second group: С-50Х (S-50Kh), С-60Х (S-60Kh) etc. Using the analogy between thermistors and polymers, the design of current circuits with conducting polymers is discussed and relations for the behavior of the thermopolymers under transient conditions are derived. There is 1 table.

Card 1/1 2

Card

KOLOSOV, S.P.; OSTRYAKOV, I.A.; SMIRNOV, V.A.; SHELENKOV, V.M.

Using current-conducting polymers as thermistors. Inzh.-fiz.zhur. 5 no.9:85-89 S '62. (MIRA 15:8)

1. Aviatsionnyy institut imeni Sergo Ordzhonikidze, Moskva.
(Thermistors) (Polymers)

KOLOSOV, S.P., doktor tekhn. nauk; PUTINSEV, V.A., inzh.; SMIRNOV, V.A., inzh.; SHELENKOV, V.M., inzh.

Calculation of reversive networks with a.c. power supply. Trudy MAI no.155:90-109 '64. (MIRA 17:11)

KOLOSOV, S.P., doktor tekhn nauk; OSTRYAKOV, I.A., inzh.; SMIRNOV, V.A., inzh.; SHELENKOV, V.M., inzh.

Calculation of circuits with current conducting polymers. Trudy MAI no.155:120-131 '64. (MIRA 17:11)

BELOV, D.; SHELENOK, I.

Protecting wooden bridges against rotting. Zhel. dor. transp. no.1:82-83 '47. (MIRA 13:2)
(Railroad bridges) (Wood--Preservation)

SHELEPA, D. D.

"Nerves of the Pia Mater Arteries of the Human Brain." Cand Med Sci, Crimean Medical Inst, Simferopol', 1953. (RZhBiol, No 4, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

USSR/Human and Animal Morphology (Normal and Pathological) S-3
Nervous System. Peripheral Nervous System

Abs Jour: Ref Zhur - Biol., No 19, 1958, 88399

Author : Sholepa, D. D.

Inst : Crimean Medical Institute

Title : The Nerves of the Pia Mater of the Brain of Man, Cat and Dog

Orig Pub: Tr. Krymsk. med. in-ta, 1957, 18, 14-20

Abstract: It was demonstrated by the method of impregnation with silver nitrate, that the cerebral pia mater (CPM) contains a large number of nerves. There are more of them in the CPM of the base of the brain than in its external upper surface. The innervation of the CPM originates from the plexus of the internal carotid artery and the vertebral

Card 1/2

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Abs Jour: Ref Zhur - Biol., No 19, 1958, 88399

Abstract: artery, from the nuclei of the cerebro-cranial nerves, and also from the nuclei of the upper cervical cerebro-spinal nerves. The nerves in the CPM are distributed in the form of vascular, proper and perivascular nerves, consisting of myelin and non-myelin fibres.

KOTINA, V.Ye.;SHELEPEN', I. N.

Internal stresses in man-made fibers. Tekst. prom. 17 no.4:17-19 Ap '57. (MLRA 10:4)
(Textile fibers, Synthetic--Testing)

5(4)

AUTHORS: Kotina, V. Ye., Shelepen', I. N. SOV/76-32-10-4/39

TITLE: Some Remarks on the Influence of the Deformation Upon the Orientation of High Polymer Substances (Nekotoryye zamechaniya otnositel'no vliyaniya deformatsii na oriyentatsiyu vysoko-polimernykh veshchestv)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 10, pp 2247-2250 (USSR)

ABSTRACT: The orientation of the molecules of high polymer substances can take place by a condensation as well as by a loosening of the structure (Ref 1). Mechanical stresses formed in polymer films were investigated by V. A. Kargin, P. V. Kozlov and others (Ref 2). V. A. Kargin and G. L. Slonimskiy (Ref 7) observed that the aging process is activated by mechanical deformations. Preston (Ref 9) assumed that as a consequence of the formation process the shell of the viscose fiber had a tighter structure than the nucleus. This difference in the density of the structure was also observed with the acetate and polyacrylo-nitrile fiber (Ref 10). It must, however, be taken into account that a loosening of the structure of high polymer substances in the

Card 1/3

Some Remarks on the Influence of the Deformation Upon the Orientation of High Polymer Substances

expansion process of the sample can take place by other means than an orientation of the molecules. Some microphotographs of the cross sections of expanded "Capron" and "Soviden" fibers are given. The normally expanded fibers have a uniform cross section, whereas with those expanded after a certain loss of their expansibility two clearly separated zones were observed. The loss of expansibility due to aging takes first place in the inner part of the fiber. The microphotograph of the cross section of a jet of a concentrated solution of polyacrylonitrile in dimethyl formamide is also given. The small air bubbles artificially placed are more dense in certain zones of the cross section, which fact is explained by the influence of mechanical stresses. The swelling of the shell and of the nucleus as a function of the expansion was also investigated microscopically; the results obtained are given in a table. The expansion caused a decrease in the swelling of the nuclear layer and an increase in the swelling of the fiber shell. The decrease of the capability of swelling is explained by a packing of the structure, caused by an orientation of the substance of the nuclear layer. In the fiber shell there takes

Some Remarks on the Influence of the Deformation Upon the Orientation of High Polymer Substances

place a loosening without orientation.
There are 2 figures, 1 table, and 11 references, 8 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna, Moskva (All-Union Scientific Research Institute of Synthetic Fibers, Moscow)

SUBMITTED: March 17, 1956

L 23314-65 EWT(d) Pg-4 IJP(c)

ACCESSION NR: AR5002275 S/0044/64/000/010/B054/B054

SOURCE: Ref. zh. Matematika, Abs. 10B261

AUTHOR: Shelepen', S. A.

TITLE: Estimate of the norm of the inverse operator for an integral equation of the Fredholm type

CITED SOURCE: Uch. zap. Permsk. un-t. no. 103, 1963, 111-115

TOPIC TAGS: Fredholm type integral equation, inverse operator norm, Fourier coefficient, norm estimate

TRANSLATION: The integral equation (1) is discussed

$$L(y) \equiv y(s) - \int_a^b K(s, t) y(t) dt = f(s), \qquad (1)$$

where $y(s), f(s) \in L_2(a, b), K(s, t) \in L_2(a, b; a, b)$ $\lambda = 1$ are not eigenvalues of the kernel. In $L_2(a, b)$ a linearly independent system of functions $y_i(s)$ is selected ($i = 1, 2, \ldots, n$). Let Z be the linear span of the system $f_i(s) = L(y_i)$ ($i = 1, \ldots, n$) and

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L 23314-65

ACCESSION NR: AR5002275

$\varphi_i(s)$ (i = 1, . . . , n) the orthonormal basis of Z. Let us define the solution of equation (1) through $v_i(s)$ for $f(s) = \varphi_i(s)$. It is determined that the norm $\| L^{-1} \|$ on the Z operator, inverse to L, admits the estimate

$$\| L^{-1} \| < \left(\sum_{i=0}^{n} N_i^2 \right)^{1/2} = M,$$

where $N_i = \| v_i(s) \|$. Let C_{ij} be Fourier coefficients of the kernel K(s,t) in respect to the system $\varphi_i(s)\,\varphi_j(t)$ (i, j = 1, 2, . . . , n)

$$\varepsilon(s, t) = K(s, t) - \sum_{i,j=1}^{n} C_{ij} \varphi_i(s) \varphi_j(t),$$

ε -the norm $\varepsilon(s,t)$ in $L_2(a,b;\ a,b)$. It is shown that if $\varepsilon < 1$, then the norm $\| L^{-1} \|$ of the inverse operator in $L_2(a,b)$ will satisfy the inequality

$$\| L^{-1} \| < \frac{\varepsilon + \sqrt{M^2 + 1 - M^2 \varepsilon^2}}{1 - \varepsilon^2}.$$

The result is applied to the equation

$$y(t) + \int_0^{2\pi} \frac{y(\tau)\, d\tau}{4\pi \left(1 - \frac{3}{4} \cos^2 \frac{t+\tau}{2} \right)} = f(t),$$

for which it is shown that $\| L^{-1} \| < 2.1\frac{1}{2}$. S. Krachkovskiy

SUB CODE: MA ENCL: 00

Card 2/2

SHELEPIN, A.

Iz opyta raboty otdelenii zheleznykh dorog. Otdeleniia povyshaiut kachestvo raboty dorog. [From experience of operation of railroad divisions. They are raising the standard of railroad work]. (Zhel-dor. transport, 1948, no. 1, p. 36-41).
DLC: HE7.Z5

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress Reference Department, Washington, 1952, Unclassified.

SHELEPIN, [illegible]

Rays of the "Communist Youth League searchlight." Prof.-tekh. obr. 21 no.5:25-26 My '64. (MIRA 17:6)

1. Sekretar' komiteta komsomola Nizhskogo gorodskogo professional'no-tekhnicheskogo uchilishcha No.19.

SHELEKHIN, A., general-mayor

The force of the Communist Youth League organization is in party leadership. Komm. Vooruzh. Sil 46 no.22:17-24 N '65. (MIRA 19:1)

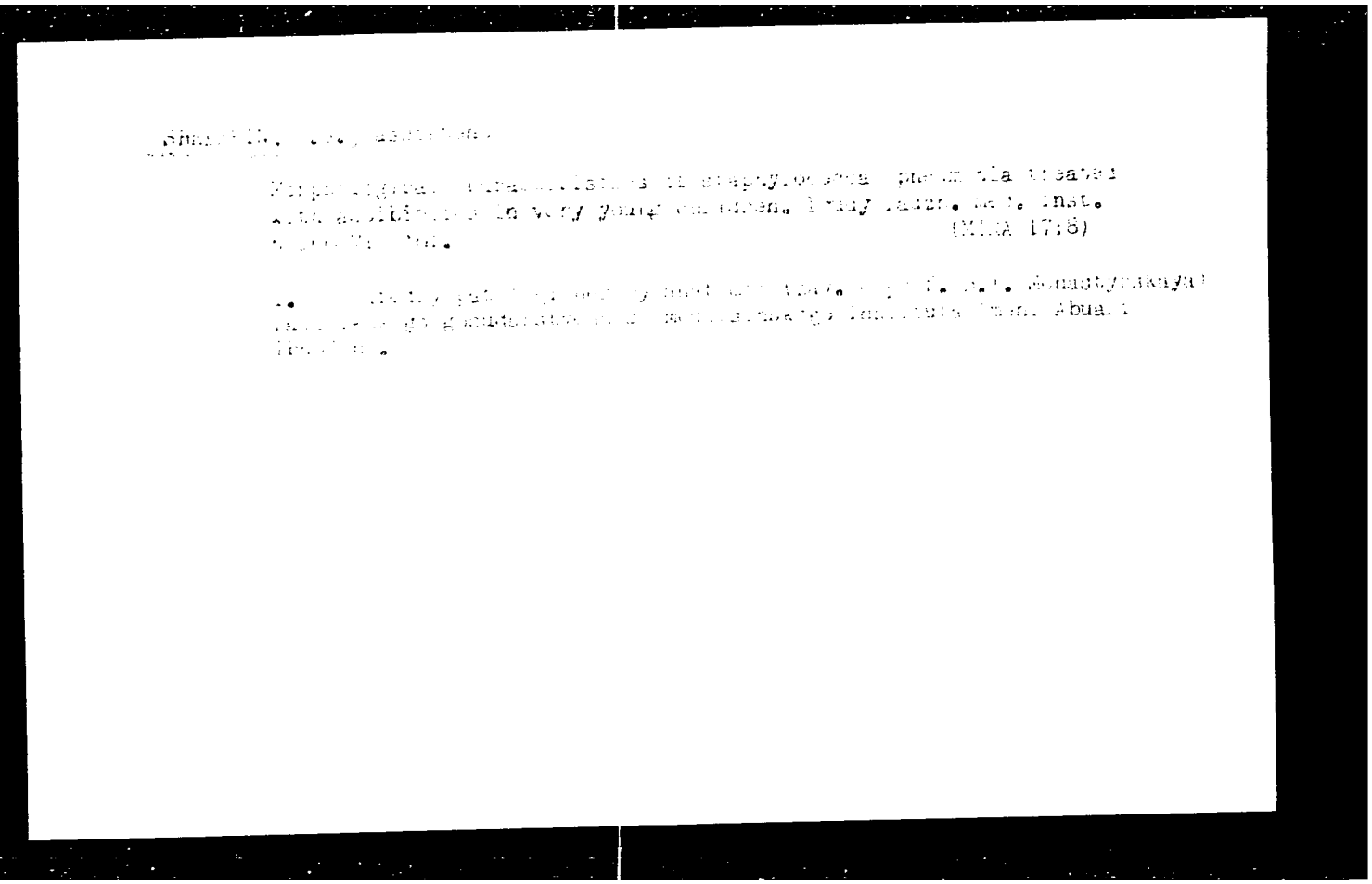
SHELEPIN, A.S.

Morphological changes in the liver during the anicteric form of virus hepatitis in children. Akt.vop.pat.pech. no.3:178-184 '65. (MIRA 18:11)

SHELEPIN, A.S. (Dushanbe)

Pneumocytosis in nursing childern. Arkh.pat. no.1:31-35 '62.
(MIRA 15:1)

1. Iz kafedry patologicheskoy anatomii (zav. - doktor med.nauk B.I. Monastyrskaya) Meditsinskogo instituta imeni Abu Ali Ibn-Siny (dir. - zasluzhennyy deyatel' nauki Z.P. Khodzhayev).
(PNEUMONIA)



MYSLYAYEVA, A.V., kand. med. nauk; ZAKHVATKINA, I.A.; SVERDLOV, S.L.; ANDREYEV, I.D., dotsent; GENADINNIK, I.S., kand. med. nauk; KUZNETSOV, A.A., NIKOLAYEVA, G.V., prof.; SILAKOVA, V.V., dotsent; SHAMLYAN, N.P.; FRIDMAN, M.N., dotsent; GORBYLEV, M.N.; SIGAL, Ye.S., zasluzhennyy vrach RSFSR; KHOLOPOVA, L.N.; GABOV, A.A.; LILEYEV, V.A.; MAKAREVICH, Ya.A., kand. med. nauk; SHELEPIN, A.S.; SHMELEV, M.M.; PEVZNER, G.I.; SILAYEV, Yu.S.

Abstracts. Sovet. med. 27 no.6:140-145 Je'63 (MIRA 17:2)

1. Iz kafedry propedevtiki vnutrennikh bolezney i patologicheskoy anatomii Kazakhskogo meditsinskogo instituta (for Myslyayeva, Zakhvatkina). 2. Iz Novozybkovskoy mezhrayonnoy bol'nitsy Bryanskoy oblasti (for. Sverdlov). 3. Iz kafedry normal'noy anatomii II Moskovskogo meditsinskogo instituta (for Andreyev). 4. Iz kafedry obshchey khirurgii i kafedry rentgenologii Chelyabinskogo meditsinskogo instituta (for Genadinnik, Kuznetsov). 5. Iz kafedry propedevticheskoy terapii Ivanovskogo meditsinskogo instituta (for Nikolayeva, Silakova). 6. Iz Lovozerskoy rayonnoy bol'nitsy Murmanskoy oblasti (for Shamlyan). 7. Iz kafedry gospital'noy terapii Bashkirskogo meditsinskogo instituta i terapevticheskogo otdeleniya 8-y bol'nitsy (for

(Continued on next card)

SHELEPIN, B.A.

Use of synthomycin emulsion in treating certain forms of eczema in children and adults. Sov.med. 22 no.10:114-115 O '58 (MIRA 11:11)

1. Iz terapevticheskogo otdeleniya zheleznodorozhnoy bol'nitsy stantsii Kochmes Pechorskoy zheleznoy dorogi (nachal'nik bol'nitsy L.V. Muradov)

(ECZEMA, ther.
chloramphenicol emulsion, local admin (Rus))
(CHLORAMPHENICOL, ther. use.
emulsion in eczema, local admin. (Rus))

SHELEPIN, B.A. (stantsiya Kochmes Komi ASSR)

Some drug-induced diseases of the liver. Fel'd. i akush. 25 no.4: 50-51 Ap '60. (MIRA 14:5)
(LIVER--DISEASES) (DRUGS--TOXICOLOGY)

SHELEPIN, B.A.

Case of individual sulfanilamide intolerance. Sov. med. 25 no.5: 146 My '61. (MIRA 14:6)

1. Iz lineynoy bol'nitsy st. Kochmes Severnoy zheleznoy dorogi (nachal'nik bol'nitsy B.A.Shelepin).
(SULFANILAMIDE--TOXICOLOGY)

SHELEPIN, F.

USSR/ Miscellaneous - Radio

Card : 1/1

Authors : Shelepin, F. (Chairman of the Council of the DOSAAF Radio Club, Vologda), and Voytulevich, F. (Leningrad)

Title : Radio Amateurs Helping Collective Farms

Periodical : Radio, No. 4, 5, April 1954

Abstract : The use of the radio for educational purposes is described.

Institution : ....

Submitted : ....

FEDOROVA, A.I.; SHELEPIN, I.V.; MOISEYEVA, N.B.

Polymerization of methyl methacrylate during the electroreduction of oxygen. Dokl.AN SSSR 138 no.1:165-168 My-Je '61. (MIRA 14:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom A.N.Frumkinym.

(Methacrylic acid) (Polymerization) (Reduction, Electrolytic)

[illegible], A.I.; [illegible] [Li Kuo-tung], SHELEPIN, I.V.

Initiation of benzyl methacrylate polymerization on a lead electrode. Zhur. fiz. khim. 38 no.6:1485-1488 Je '64. (MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 52741-65 EWT(m)/EPF(c)/EWG(m)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL RWH/WW/RM

ACCESSION NR: AP5016026 UR/0076/64/038/011/2676/2679 44 42 B

AUTHOR: Shelepin, I. V.; Fedorova, A. I.

TITLE: Initiation of polymerization of methyl methacrylate at the reduction potentials of hydrogen ions

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 11, 1964, 2676-2679

TOPIC TAGS: polymerization, hydrogen, electrolysis, chemical reduction, electrochemistry, acrylic plastic

Abstract: The influence of methyl methacrylate on the reduction of hydrogen ions on a mercury electrode and the role of the autooxidation products of the monomer in the electrochemical initiation of polymerization were investigated. The polarization curves and curves of the time dependence of the current strength during electrolysis, conducted on a stationary mercury electrode in acid aqueous solutions saturated with methyl methacrylate, at the reduction potentials of hydrogen ions, were measured. It was found that the formation of the high-molecular product in the reaction medium was related to the reduction of peroxide impurities in the monomer, as well, perhaps, as their decomposition products. The polarization curves of the reduc-

Card 1/2

L 52741-65

ACCESSION NR: AP5016026

2

tion of hydrogen ions in the presence of methyl methacrylate exhibited an unusual shape: methyl methacrylate exerted no influence on the reduction of hydrogen ions at low current densities; with increasing current density, a decrease in overvoltage was observed, which then rose sharply, giving a region of inhibited liberation of hydrogen. When H_2O_2 was added, the region of inhibited liberation of hydrogen began at a more positive value of the potential. Plots of the current density versus time of electrolysis for a saturated acid solution of the monomer showed a negligible increase in the current with time, in contrast to the I-t curve measured with a solution of the monomer containing autooxidation products, exhibiting a steep rise in the current, related to the catalytic liberation of hydrogen, followed by a flat maximum. "We express deep thanks to Academician A. N. Frumkin for valuable information." Orig. art. has 1 figure and 3 graphs.

ASSOCIATION: Moskovskiy gosudarstvenny, universitet im. M. V. Lomonosova, Kafedra elektrokhimii (Department of Electrochemistry, Moscow State University)

SUBMITTED: 20Aug63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 004 OTHER: 002 JPRS

gaf

Card 2/2

SHELEPIN, I.V.; FRUMKIN, A.N., akademik; FEDOROVA, A.I.; VASINA, S.Ya.

Study of the double layer structure in the electrochemical initiation of methyl methacrylate polymerization. Dokl. AN SSSR 154 no.1:203-206. Ja '64. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.

SOV/56-34-6-26/51

AUTHOR: Shelepin, L. A.

TITLE: On the Theory of the Particles With Higher Spins (K teorii chastits s vysshimi spinami)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34, Nr 6, pp. 1574-1586 (USSR)

ABSTRACT: This paper proposes an algebraic method for the investigation of the relativistically invariant equations for the particles with higher spins. It investigates the relativistically invariant linear equations $\alpha_k \partial_k \phi + \varkappa\phi = 0$. The wave function ϕ of the particle has a finite number of components and may be transformed according to a representation with a finite number of dimensions. Discussing the general method, the author first investigates some general relations. In the following part of this paper the above mentioned method is applied to equations with the maximum spin 1 (in an algebraic form) and to equations with the maximum spin 3/2 (in the spin-tensor form). In this way automatically the computation relations in a parametric form are obtained. In the trivial case with the maximum spin 1/2 the Dirac (Dirak) equation is the only ir-

Card 1/3

reducible equation that satisfies the physical conditions. Some conditions for the existence of an invariant Lagrange (Lagranzh) function are given. If an invariant Lagrange (Lagranzh) function exists one may restrict oneself to the investigation of a matrix. The algebra of the matrix α_k may be split up, it contains 126 independent matrices. Altogether, there are 4 irreducible equations which satisfy the physical conditions. In the case of the maximal spin 3/2 all the admissible matrices α_k are contained in the direct product of the 3 Dirac (Dirak) algebrae. The author investigates the algebra (44) in a spin-tensor form in order to demonstrate the possibilities offered by the method. The necessary condition for the existence of an invariant real Lagrange (Lagranzh) function is given in an explicit form. The author discusses a way of obtaining conditions of definiteness, the additional conditions, and for the algebra of the matrices α_k. Altogether, there are 4 types of equations: 1) the Ginzburg equation describes a particle that may exist in 2 states with the spins 3/2 and 1/2. 2) The Fradkin equation describes a particle with the spin 3/2 and with an anomalous magnetic moment. 3) The Ulegl'-Petraš (Petrash) equation for the free state is identical to the Dirac (Dirak) equation. When there

is an interaction with the electromagnetic field this equation describes a particle with the spin 1/2 and with an anomalous magnetic moment. 4) The Pauli-Fierz (Firts) equation. The author thanks Professor V. L. Ginzburg, V. Ya. Faynberg, Ye. S. Fradkin for their interest in this paper. There are 13 references, 7 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev, AS USSR)

SUBMITTED: January 8, 1958

16.8300

76978
SOV/56-37-6-18/55

AUTHOR: Shelepin, L. A.

TITLE: Contribution to the Theory of Relativistically Invariant Equations

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1626-1638 (USSR)

ABSTRACT: A new method was developed for the investigation of group properties of the relativistically invarant equations $a_\sigma \partial\psi - \kappa\psi = 0$. The method is based on an algebraic analysis of a matrices of the so-called $U(a)$-algebra. By this method the commutation relations between matrices that completely determine the $U(a)$--algebra can be directly deduced. The structure of the $U(a)$-algebra and of the associated infinitesimal group ring was studied in detail, including the conditions of the irreducibility. Examples were given of some commutation relations and in particular those that satisfy the Ginzburg and Pauli-Fierz equation.

Card 1/2

Contribution to the Theory of Relativistically Invariant Equations

76978
SOV/56-37-6-18/55

The method leads to substantial simplification of the calculations for high-spin particles. With the help of this, the structure of relativistically invariant equations becomes clear, and results can be obtained for such spins as 2, 5/2, and 3, which practically cannot be obtained by other methods. Though the derivation was carried out for the finite concept of the system, it could also be extended to infinite concepts. This would be of interest in the field theory. This work was performed under the guidance of V. L. Ginzburg, V. Ya. Faynberg, and E. S. Fradkin. The text contains 73 equations; and 7 references, 5 Soviet, 1 British, 1 U.S. The U.S. and U.K. references are: Harish-Chandra, Phys. Rev., 71, 793, 1947; K. I. Le Couteur, Proc. Roy Soc., A 202, 284, 1950.

ASSOCIATION: P. N. Lebedev Phys. Inst. Acad. Sciences USSR, USSR (Fizicheskiy institut imeni P. N. Lebedev Akademii nauk SSSR, SSSR)

SUBMITTED: April 30, 1959

Card 2/2

SHELEPIN, L.A.

Racah method in the theory of relativistic equations. Zhur. eksp. i teor. fiz. 40 no.5:1369-1383 My '61. (MIRA 14:7)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.
(Differential invariants)
(Relativity (Physics))

SHELEPIN, L. A.

Dissertation defended for the degree of Candidate of Physicomathemical Sciences at the Institute of Theoretical and Experimental Physics 1962:

"Quantum Theorem of Relativistic Wave Equations for Particles With Arbitary Spin."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

GUDZENKO, L.I.; SHELEPIN, L.A.

Negative absorption in a nonequilibrium hydrogen plasma. Zhur. eksp. i teor. fiz. 45 no.5:1445-1449 N '63. (MIRA 17:1)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR.

L 49448-65 EWT(m) Peb DIAAP

ACCESSION NR: AT5009881 UR/2504/64/030/000/0253/0321

11
15
B+1

AUTHOR: Shelepin, L. A.

TITLE: Covariant theory of relativistic wave equations for particles with arbitrary spin 19

SOURCE: AN SSSR. Fizicheskiy institut. Trudy, v. 30, 1964. Fizicheskaya optika, 253-321

TOPIC TAGS: group theory, relativistic equation, relativistic invariance, matrix algebra, symmetry property, covariant theory

ABSTRACT: This is a dissertation describing an investigation dealing with the general group properties of relativistically invariant equations (matrix algebra, traces, symmetry properties, physical requirements, calculation procedures, equivalent transformation), with covariant method used to investigate the relativistic equations in which the results are written not simply in invariant form, but as an expansion in terms of the covariants (symmetrizers) of the Lorentz group. The Racah method is used for the investigation of the group properties of the relativistic equations. The section headings are: I. General problems of theory of re-

Card 1/3

L 49448-65

ACCESSION NR: AT5009881

3

lativistic equations. 2. Review of literature. 3. Principles of the covariant method. II. The Racah method in the theory of relativistic equations. 4. On the methods of Racah. 5. General theory of transformation matrices. 6. Theory of relativistic equations as a theory of transformation matrices. 7. U(α) algebra. 8. Traces. III. Equivalent transformations. Equivalent representations. 9. General analysis. Normalization transformations. 10. Parametric representation. 11. The Gel'fand-Yaglom representation. 12. Tensor representation. 13. Spinor, spin tensor, and other representations. IV. Physical requirements. Symmetry problems. 14. Invariant Lagrange function. 15. Infinitesimal matrix. Infinitesimal group ring. Irreducibility. 16. Spin and mass states. Definiteness. 17. Reflection. 18. Charge conjugation. 19. Various symmetries. V. Concrete examples of relativistic equations. 20. Parametric method in tensor form. 21. Principles of application of the method of covariants. 22. Equations with integer spin. 23. Equations with half-integer spin. 24. Equations with interaction. VI. Applications in spectroscopy. 25. General remarks. 26. Equations that are invariant under rotations. 27. Conclusion. "I thank Corresponding member AN SSSR V. L. Ginzburg and V. Ya. Faynberg for continuous interest and support, and Ye. S. Fradkin for valuable discussions." Orig. art. has: 6 figures and 352 formulas.

Card 2/3

L 49448-65
ACCESSION NR: AT5009881

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 047 OTHER: 062

Card 3/3 CC

L 44678-66 EWT(1) GW
ACC NR: AR6017241 SOURCE CODE: UR/0058/65/000/012/D038/D038

AUTHOR: Gudzenko, L. I.; Shelepin, L. A.

64
B

ORG: none

TITLE: Possible role of induced radiation in the solar atmosphere

SOURCE: Ref. zh. Fizika, Abs. 12D317

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 295-300

TOPIC TAGS: ionized plasma, radiation, solar atmosphere

ABSTRACT: Induced radiation in a highly ionized plasma has been investigated when the short collision times permit the plasma to cool rapidly by kinetic temperatures so that a strong inversion population arises. Conditions at low densities and the possible connection of induced radiation in free space with phenomena in the solar atmosphere are considered. [Translation of abstract] [NT]

SUB CODE: 20/

Card 1/1 hs

L 44800-66 EWT(1)/EEC(k)-2/T/EWP(k) IJP(c) WG/WW/AT

ACC NR: AP6031264 SOURCE CODE: UR/0057/66/036/009/1622/1625

AUTHOR: Gordiyets, B. F.; Gudzenko, L. I.; Shelepin, L. A.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: The cooling of the free electrons of a plasma

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 9, 1966, 1622-1625

TOPIC TAGS: plasma laser, ~~infrared~~ IR laser, ~~ultraviolet~~ UV laser, population inversion, ionized plasma, free electron

ABSTRACT: The present paper is a continuation of four earlier papers by two of the authors (Gudzenko and Shelepin), who showed that laser action was possible at optical, infrared, and ultraviolet frequencies when electrons of a highly ionized plasma with densities of 10^{14}—10^{16} cm^{-3} were rapidly cooled from 20,000 to 1000K. They now theoretically consider the cooling rates as a function of elastic collisions of free electrons with ions and neutral atoms and as a recombination of electrons at the cylinder walls. Their considerations are based on an electron model repeatedly heated and cooled by a pulsed electric field. The rapidly heated electrons generate a highly ionized, low-temperature plasma when the field is suddenly removed or the free electrons are cooled by collision of hot electrons with heavy cold atoms or ambipolar diffusion for 10^{-8}—10^{-7} sec. Population inversion results which is sufficient to achieve laser action. The study indicates the feasibility of developing a pulsed

UDC: 533.9

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L 44800-66

ACC NR: AP6031264

plasma laser in which simultaneous modulation of the heating electric field and the longitudinal magnetic field cause a highly ionized plasma during the heating cycle. Orig. art. has: 6 formulas.

[YK]

SUB CODE: 20/ SUBM DATE: 28May65/ ORIG REF: 008/ OTH REF: 007/ ATD PRESS: 5080

Card 2/2 blg